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ARMY AVIATION TEST BOARD FORT RUCKER ALA
PRODUCT-IMPROVEMENT TEST OF IMPROVED DOOR LATCHES FOR OH-6A HEL--ETC(U)
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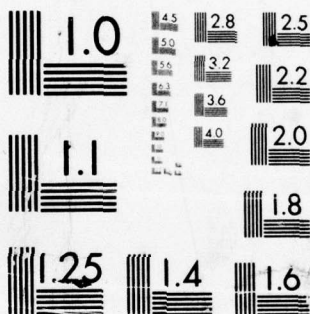
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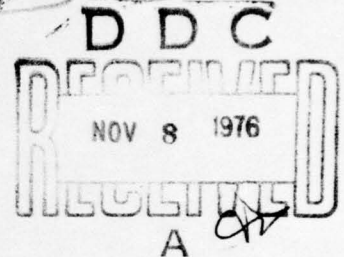
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DEPARTMENT OF THE ARMY
UNITED STATES ARMY AVIATION TEST BOARD ✓
Fort Rucker, Alabama 36360

STEBG-TD

SUBJECT: Final Report of Test, "Product-Improvement Test of
Improved Door Latches for OH-6A Helicopters,"
USATECOM Project No. 4-6-0251-07.

TO: Commanding General
US Army Materiel Command
ATTN: AMCPM-LH-C
P. O. Box 209, Main Office
St. Louis, Missouri 63166



1. Reference. Letter, AMSTE-BG, Headquarters, US Army Test and Evaluation Command, 16 November 1967, subject: "Test Directive, Product Improvement Test, OH-6A Prototype Pilot and Cargo Door Latch Assemblies."

2. Purpose. To determine the suitability of the improved door latch and associated hardware for use on current production crew and cargo doors of the OH-6A Helicopter.

3. Background. Numerous problems associated with the standard door latches on the OH-6A have been encountered. Broken and frayed latch cables, broken lever latches, and improper latch adjustment caused by cable stretching have indicated that production latches are unsatisfactory. The Cayuse Project Manager requested that the US Army Aviation Test Board test a latch mechanism designed to correct these deficiencies.

4. Description of Materiel. The test door latches (figure 1, inclosure) provide four adjustable lever latches constructed from material which is heavier than that originally used. The latch cable is

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housed within a metal conduit. The improved latching mechanism attaches to the mounting points of the standard door latch.

5. Scope. The US Army Aviation Test Board tested the product-improvement door latches at Fort Rucker, Alabama, during the period 17 October 1967 to 17 November 1967. The manufacturer then modified the latch mechanism to provide flex joints in the conduit and a rubber dust boot on each end of the conduit. This modified latch was delivered to the USAAVNTBD on 15 January 1968, and testing was completed 19 February 1968. The latches were installed on both crew doors of an OH-6A Helicopter (serial number 65-12921), and the aircraft was flown for 30 hours. Twelve thousand rounds of 7.62mm ammunition were fired from the helicopter during the test period.

6. Summary of Results.

a. The improved prototype latch assembly was installed on current configuration doors without difficulty. Seven man-hours were required to install the assembly on each door. It is likely that less time will be required with experienced personnel installing production latches.

b. Adjustment for each latch allowed the latches to be rigged individually, thereby preventing the improper adjustment that has contributed to the broken door cables on standard configuration doors.

c. The door latches were an improvement over the latches currently in use. The doors did not flex out at Vne with the door vents closed and the nose vent full open.

d. During installation of the door latches, the manufacturer's representative installed a "stop" for the inside handle (figure 2, item "A"). This "stop" prevented the handle from traveling past the center (open) position, thereby precluding overstressing of the cable.

e. The rubber dust boots on the ends of the conduit (figure 2, item "B") were not bonded in place and could be inadvertently displaced.

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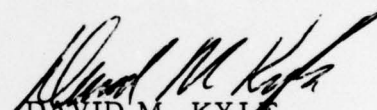
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f. Personnel from the US Army Board for Aviation Accident Research who inspected the latch found no safety hazards; however, comment was made about the position of the inside door handle on armor-plated aircraft relative to possible personnel injury.

7. Conclusion. The improved door latching mechanism is suitable for installation on current production OH-6A doors.

8. Recommendation. It is recommended that the improved door latch mechanism, modified to incorporate bonded dust boots and a "stop" for the inside handle, be installed on production aircraft doors.

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DAVID M. KYLE
Colonel, Artillery
President

Copies furnished:

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Aberdeen Proving Ground, Maryland 21005 (2cys)

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PHOTOGRAPHS

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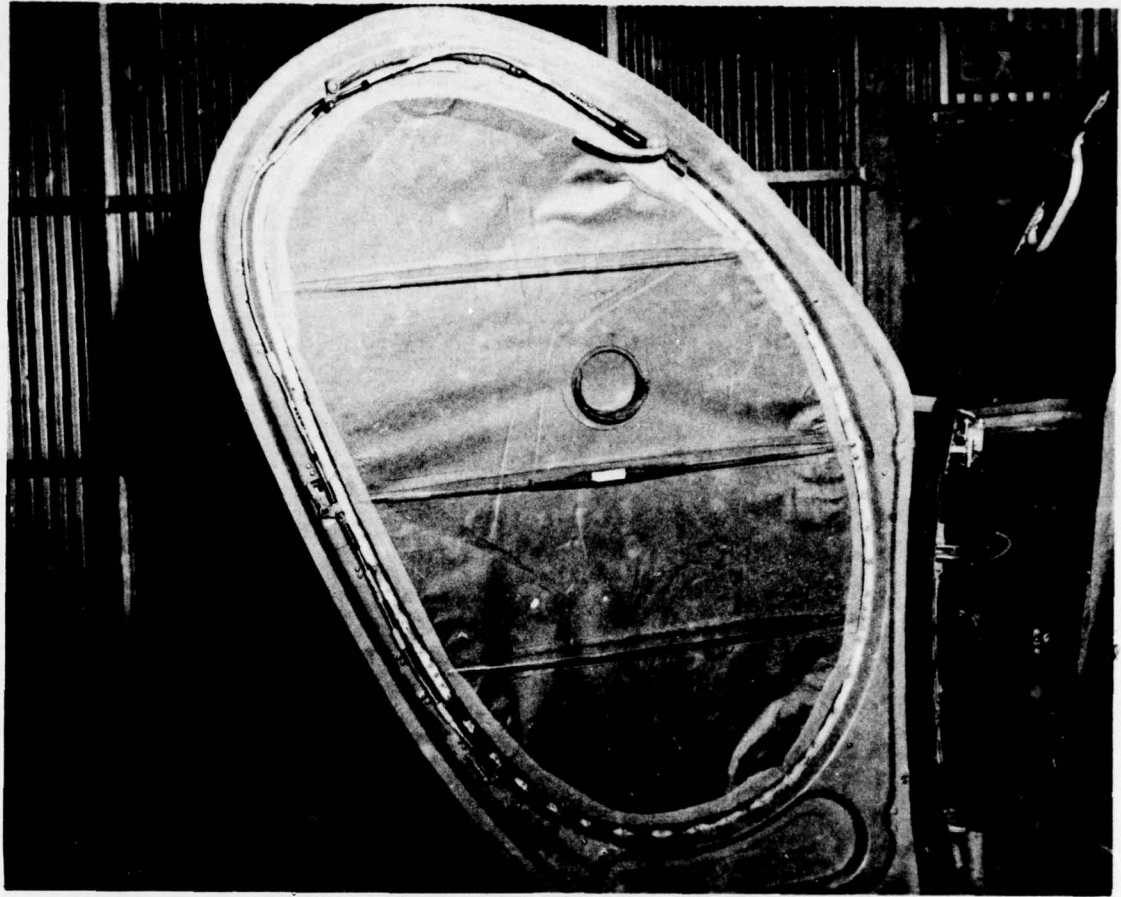


Figure 1. Improved door latch
for the OH-6A.

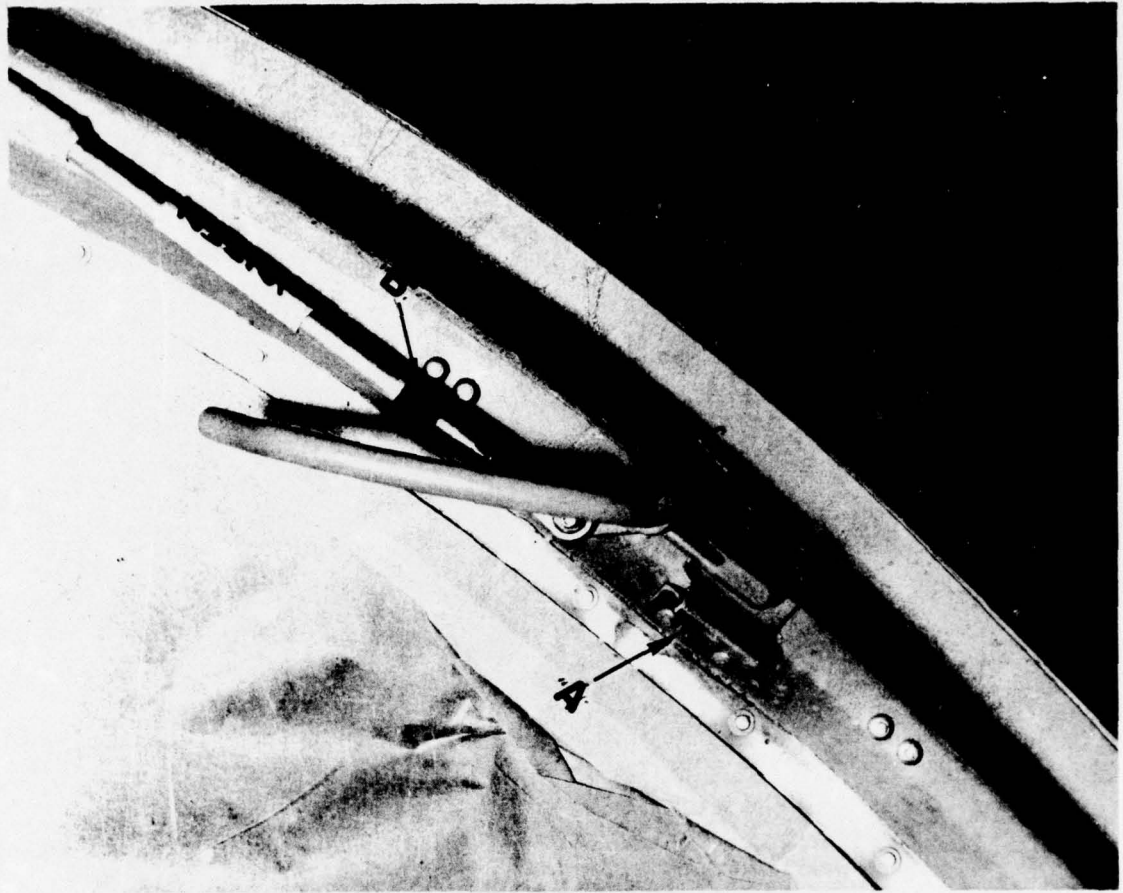


Figure 2. "Stop" (A) for inside handle and rubber dust boot (B).